	Type	Hits	Search Text	DBs
1	BRS	3	"200026358"	USPAT; US-PGPUB; EPO; JPO; DERWENT;
2	BRS	602	toji	USPAT; US-PGPUB; EPO; JPO; DERWENT;
3	BRS	7	toji and yano	USPAT; US-PGPUB; EPO; JPO; DERWENT;
4	BRS	2	JP05984	USPAT; US-PGPUB; EPO; JPO; DERWENT;
5	BRS	2	"20030167524"	USPAT; US-PGPUB; EPO; JPO; DERWENT;
6	BRS	1	"200151638"	USPAT; US-PGPUB; EPO; JPO; DERWENT;

RESULT 1
S66677
thioredoxin-disulfide reductase (EC 1.8.1.9) [validated] - human
N;Contains: thioredoxin reductase (NADPH), placental form; thioredoxin reductase (NADPH), T-cell form
C;Species: Homo sapiens (man)
C;Date: 28-Oct-1996 #sequence_revision 10-Oct-1997 #text_change 03-Jun-2002
C;Accession: S66677; S74270; A43122; G01120
R;Gasdaska, P.Y.; Gasdaska, J.R.; Cochran, S.; Powis, G.
FEBS Lett. 373, 5-9, 1995
A;Title: Cloning and sequencing of a human thioredoxin reductase.
A;Reference number: S66677; MUID:96013875; PMID:7589432
A;Accession: S66677
A;Molecule type: mRNA
A;Residues: 1-497 <GAS1>
A;Cross-references: EMBL:X91247; NID:g1237037; PIDN:CAA62629.1; PID:g1237038; GB:S79851; NID:g1184536; PID:g1184537
A;Accession: S74270
A;Molecule type: protein
A;Residues: 3-11;157-165;435-457 <GAS2>
R;Gladyshev, V.N.; Jeang, K.T.; Stadtman, T.C.
Proc. Natl. Acad. Sci. U.S.A. 93, 6146-6151, 1996
A;Title: Selenocysteine, identified as the penultimate C-terminal residue in human T-cell thioredoxin reductase, corresponds to TGA in the human placental gene.
A;Reference number: A43122; MUID:96234105; PMID:8650234
A;Accession: A43122
A;Molecule type: protein
A;Residues: 488-497,'X',499 <GLA>
A;Note: the residue designated 'X' was determined to be selenocysteine; we have shown the residue as Cys
C;Comment: In most tissues, such as placenta, the UGA codon is used as the terminator. In the T-cell at least the UGA codon is translated with selenocysteine, and termination occurs at a UAA codon two codons further along.
C;Genetics:
A;Gene: GDB:TXNRD1; TXNR
A;Cross-references: GDB:683567; OMIM:601112
A;Map position: 12q23-12q24.1
C;Complex: homodimer
C;Function:
A;Description: catalyzes the reduction of thioredoxin by NADPH
A;Note: the T-cell form also has peroxidase activity
C;Superfamily: dihydrolipoamide dehydrogenase; dihydrolipoamide dehydrogenase homology
C;Keywords: alternative termination; FAD; flavoprotein; homodimer; NADP; oxidoreductase; redox-active disulfide; selenocysteine
F;3-499/Product: thioredoxin reductase (NADPH), T-cell form #status experimental <MAT1>
F;3-497/Product: thioredoxin reductase (NADPH), placental form #status experimental <MAT2>
F;14-42/Region: beta-alpha-beta FAD nucleotide-binding fold
F;16-479/Domain: dihydrolipoamide dehydrogenase homology <DLD>
F;192-222/Region: beta-alpha-beta NADP nucleotide-binding fold
F;59-64/Disulfide bonds: redox-active #status predicted
F;472/Active site: His #status predicted
F;498/Modified site: selenocysteine #status experimental

Query Match 52.1%; Score 1429; DB 1; Length 499;
Best Local Similarity 56.0%; Pred. No. 6.8e-97;
Matches 274; Conservative 77; Mismatches 134; Indels 4; Gaps 2;

```
Qy         36 DYDLLVVGGGSGGLACAKEAAQLGRKVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMH 95
              ||||:::|||||||| |||||| |:|| |:|:| |:| ||||||||||||||||||||
Db         12 DYDLIIIGGGSGGLAAAKEAAQYGKKVMVLDFVTPTPLGTRWGLGGTCVNVGCIPKKLMH 71

Qy         96 QAALLGGLIQDAPNYGWEVAQPVPHDWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIK 155
              ||||||  :||: ||||:| : | ||| :| |||||||: |||||:|| |:::|| | |
Db         72 QAALLGQALQDSRNYGWKVEETVKHDWDRMIEAVQNHIGSLNWGYRVALREKKVVYENAY 131

Qy        156 ASFVDEHTVCGVAKGGKEILLSADHIIIATGGRPRYPTHIEGALEYGITSDDIFWLKESP 215
                |:  | :      ||| : ||:  :|||| ||||   | |  || |:|||:| |   |
Db        132 GQFIGPHRIKATNNKGKEKIYSAESFLIATGERPRY-LGIPGDKEYCISSDDLFSLPYCP 190

Qy        216 GKTLVVGASYVALECAGFLTGIGLDTTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRG 275
              |||||||||||||||||| ||||  |:|:||| |||||| |:: : |||  || :|:|
Db        191 GKTLVVGASYVALECAGFLAGIGLGVTVMVRSILLRGFDQDMANKIGEHMEEHGIKFIRQ 250

Qy        276 CAPSRVRRL---PDGQLQVTWEDSTTGKEDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTS 332
                | :| ::     |:|:|  : : : :   | ::||: ||||   || : ||  ||  :
Db        251 FVPIKVEQIEAGTPGRLRVVAQSTNSEEIIEGEYNTVMLAIGRDACTRKIGLETVGVKIN 310

Qy        333 PDTQKILVDSREATSVPHIYAIGDVVEGRPELTPTAIMAGRLLVQRLFGGSSDLMDYDNV 392
              | || |   | |:||:||||||::| : |||| || ||||| |||: ||:   ||:||
Db        311 EKTGKIPVTDEEQTNVPYIYAIGDILEDKVELTPVAIQAGRLLAQRLYAGSTVKCDYENV 370

Qy        393 PTTVFTPLEYGCVGLSEEEAVARHGQEHVEVYHAHYKPLEFTVAGRDASQCYVKMVCLRE 452
              ||||||||||  |||||:|| : |:|::||||::: |||:|:  || ::|| |::|  :
Db        371 PTTVFTPLEYGACGLSEEKAVEKFGEENIEVYHSYFWPLEWTIPSRDNNKCYAKIICNTK 430

Qy        453 PPQLVLGLHFLGPNAGEVTQGFALGIKCGASYAQVMRTVGIHPTCSEEVVKLRISKRSGL 512
              : |:| | ||||||||||||  :||| :  |:  |:|||| |:|    | ::||||
Db        431 DNERVVGFHVLGPNAGEVTQGFAAALKCGLTKKQLDSTIGIHPVCAEVFTTLSVTKRSGA 490

Qy        513 DPTVTGCXG 521
                 || |
Db        491 SILQAGCCG 499
```

RESULT 1
US-10-032-201B-297
; Sequence 297, Application US/10032201B
; Publication No. US20030167524A1
; GENERAL INFORMATION:
; APPLICANT: Van Rooijen, Gijs
; APPLICANT: Deckers, Harm
; APPLICANT: Heifetz, Peter Bernard
; APPLICANT: Briggs, Steven
; APPLICANT: Dalmia, Bipin Kumar
; APPLICANT: Del Val, Greg
; APPLICANT: Zaplachinski, Steve
; APPLICANT: Moloney, Maurice
; TITLE OF INVENTION: METHODS FOR THE PRODUCTION OF MULTIMERIC PROTEINS, AND RELATED
; TITLE OF INVENTION: COMPOSITIONS
; FILE REFERENCE: 38814 351B
; CURRENT APPLICATION NUMBER: US/10/032,201B
; CURRENT FILING DATE: 2001-12-19
; NUMBER OF SEQ ID NOS: 313
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 297
; LENGTH: 494
; TYPE: PRT
; ORGANISM: Homo sapien
US-10-032-201B-297

Query Match 93.7%; Score 488; DB 12; Length 494;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 488; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          32 AGQRDYDLLVVGGGSGGLACAKEAAQLGRKVAVVDYVEPSPQGTRWGLGGTCVNVGCIPK 91
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           5 AGQRDYDLLVVGGGSGGLACAKEAAQLGRKVAVVDYVEPSPQGTRWGLGGTCVNVGCIPK 64

Qy          92 KLMHQAALLGGLIQDAPNYGWEVAQPVPHDWRKMAEAVQNHVKSLNWGHRVQLQDRKVKY 151
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          65 KLMHQAALLGGLIQDAPNYGWEVAQPVPHDWRKMAEAVQNHVKSLNWGHRVQLQDRKVKY 124

Qy         152 FNIKASFVDEHTVCGVAKGGKEILLSADHIIIATGGRPRYPTHIEGALEYGITSDDIFWL 211
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         125 FNIKASFVDEHTVCGVAKGGKEILLSADHIIIATGGRPRYPTHIEGALEYGITSDDIFWL 184

Qy         212 KESPGKTLVVGASYVALECAGFLTGIGLDTTIMMRSIPLRGFDQQMSSMVIEHMASHGTR 271
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         185 KESPGKTLVVGASYVALECAGFLTGIGLDTTIMMRSIPLRGFDQQMSSMVIEHMASHGTR 244

Qy         272 FLRGCAPSRVRRLPDGQLQVTWEDSTTGKEDTGTFDTVLWAIGRVPDTRSLNLEKAGVDT 331
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         245 FLRGCAPSRVRRLPDGQLQVTWEDSTTGKEDTGTFDTVLWAIGRVPDTRSLNLEKAGVDT 304

Qy         332 SPDTQKILVDSREATSVPHIYAIGDVVEGRPELTPTAIMAGRLLVQRLFGGSSDLMDYDN 391
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         305 SPDTQKILVDSREATSVPHIYAIGDVVEGRPELTPTAIMAGRLLVQRLFGGSSDLMDYDN 364

Qy         392 VPTTVFTPLEYGCVGLSEEEAVARHGQEHVEVYHAHYKPLEFTVAGRDASQCYVKMVCLR 451
```

```
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        365 VPTTVFTPLEYGCVGLSEEEAVARHGQEHVEVYHAHYKPLEFTVAGRDASQCYVKMVCLR 424

Qy        452 EPPQLVLGLHFLGPNAGEVTQGFALGIKCGASYAQVMRTVGIHPTCSEEVVKLRISKRSG 511
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        425 EPPQLVLGLHFLGPNAGEVTQGFALGIKCGASYAQVMRTVGIHPTCSEEVVKLRISKRSG 484

Qy        512 LDPTVTGC 519
                ||||||||
Db        485 LDPTVTGC 492
```

RESULT 3
ABP60944
ID ABP60944 standard; Protein; 521 AA.
XX
AC ABP60944;
XX
DT 06-SEP-2002 (first entry)
XX
DE Homo sapiens thioredoxin reductase SEQ ID NO:293.
XX
KW Multimeric protein; redox protein; thioredoxin; thioredoxin reductase;
KW oil body; ophthalmological; antidiabetic; cytostatic; antipsoriatic;
KW vasotropic; vulnerary; antibacterial; immunosuppressive; antiulcer;
KW food product; milk; wheat; oxidative stress; cataract; diabetes;
KW chronic obstructive pulmonary disease; envenomation; psoriasis; sepsis;
KW bronchiopulmonary disease; malignancy; reperfusion injury; wound healing;
KW gastro intestinal bleeding; intestinal bowel disease; ulcer;
KW gastro oesophageal reflux disease.
XX
OS Homo sapiens.
XX
PN WO200250289-A1.
XX
PD 27-JUN-2002.
XX
PF 19-DEC-2001; 2001WO-US50240.
XX
PR 19-DEC-2000; 2000US-0742900.
PR 05-JUL-2001; 2001US-302885P.
PR 04-DEC-2001; 2001US-0006038.
XX
PA (SEMB-) SEMBIOSYS GENETICS INC.
PA (SYGN) SYNGENTA PARTICIPATIONS AG.
XX
PI Van Rooijen G, Deckers H, Heifetz PB, Briggs SP, Dalmia BK;
PI Del Val G, Zaplachinski S, Moloney M;
XX
DR WPI; 2002-508806/54.
XX
PT Producing oil body associated with recombinant multimeric protein
PT complex e.g. redox proteins and immunoglobulins comprises producing
PT recombinant polypeptides capable of forming the complex in cells
PT comprising oil bodies -
XX
PS Claim 82; Page 337-338; 362pp; English.
XX
CC The present invention describes a method (M1) for producing an oil body
CC associated with a recombinant multimeric protein complex (MPC). M1
CC comprises producing in a cell comprising oil bodies a first and second
CC recombinant polypeptide (P1, P2), where P1 is capable of associating
CC with P2 to form the MPC and associating the complex with an occlusion
CC body (OB) through an OB-targeting-protein capable of associating with OB
CC and P1. M1 is useful for producing an oil body associated with a
CC recombinant MPC. The oil bodies are further formulated for use in the
CC preparation of a food product such as milk or wheat based food product,
CC personal care product which reduces the oxidative stress on the surface
CC area of the human body or used to lighten the skin, or a pharmaceutical

CC composition used to treat chronic obstructive pulmonary disease (COPD), cataracts, diabetes, envenomation, bronchiopulmonary disease, psoriasis, malignancies, reperfusion injury, wound healing, sepsis, gastro intestinal (GI) bleeding, intestinal bowel disease (IBD), ulcers, GERD (gastro oesophageal reflux disease). ABN89569 to ABN89593 and ABP60677 to ABP60964 represent sequence given in the exemplification of the present invention.
XX
SQ Sequence 521 AA;

Query Match 99.7%; Score 2736; DB 23; Length 521;
Best Local Similarity 99.8%; Pred. No. 2.8e-253;
Matches 520; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60

Qy         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120

Qy        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180

Qy        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240

Qy        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300

Qy        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360

Qy        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420
              |||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 RPELTPIAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420

Qy        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480

Qy        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521
              |||||||||||||||||||||||||||||||||||||||||
Db        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521
```

RESULT 6
AAE05190
ID AAE05190 standard; Protein; 522 AA.
XX
AC AAE05190;
XX
DT 12-SEP-2001 (first entry)
XX
DE Human drug metabolising enzyme (DME-21) protein.
XX
KW Human; drug metabolising enzyme; DME-21; immunosuppressive; gene therapy;
KW cytostatic; autoimmune disorder; inflammatory disorder; atherosclerosis;
KW osteoporosis; eye disorder; hepatic tumour; Addison's disease; cretinism;
KW rheumatoid arthritis; acquired immune deficiency syndrome; AIDS; anaemia;
KW developmental disorder; endocrine disorder; iritis; acromegaly; epilepsy;
KW thyrotoxicosis; pancreatic disorder; diabetes mellitus; obesity; adenoma;
KW gastrointestinal disorder; nodular hyperplasia; conjunctivitis; glaucoma;
KW actinic keratosis; metabolic disorder; dysphagia; anorexia; carcinoma;
KW cell proliferative disorder.
XX
OS Homo sapiens.
XX
PN WO200151638-A2.
XX
PD 19-JUL-2001.
XX
PF 12-JAN-2001; 2001WO-US01174.
XX
PR 14-JAN-2000; 2000US-0176139.
PR 21-JAN-2000; 2000US-0177443.
PR 28-JAN-2000; 2000US-0178574.
XX
PA (INCY-) INCYTE GENOMICS INC.
XX
PI Yang J, Baughn MR, Burford N, Au-Young J, Lu DAM, Reddy R;
PI Ring HZ, Hillman JL, Yue H, Azimzai Y, Yao MG, Gandhi AR;
PI Nguyen DB, Tang YT, Lal P, Bandman O;
XX
DR WPI; 2001-425874/45.
DR N-PSDB; AAD09956.
XX
PT Drug metabolizing enzymes and encoding polynucleotides, useful for
PT diagnosing, treating and/or preventing autoimmune, inflammatory, cell
PT proliferative, developmental, endocrine, eye, metabolic, and
PT gastrointestinal disorders -
XX
PS Claim 1; Page 155-156; 133pp; English.
XX
CC The present sequence is human drug metabolising enzyme (DME-21) protein.
CC Human DME and its nucleic acid molecule are useful for the diagnosis,
CC treatment and prevention of disorders associated with increased or
CC decreased expression of DME. Examples of such disorders include,
CC autoimmune/inflammatory disorder such as acquired immune deficiency
CC syndrome (AIDS), rheumatoid arthritis, osteoporosis; cell proliferative
CC disorder such as actinic keratosis, atherosclerosis; developmental
CC disorder such as epilepsy, anaemia; endocrine disorder such as
CC acromegaly, cretinism, thyrotoxicosis; pancreatic disorder such as

CC diabetes mellitus; eye disorder such as conjunctivitis, glaucoma, iritis;
CC metabolic disorder such as Addison's disease, obesity; gastrointestinal
CC disorder such as anorexia, dysphagia and hepatic tumours including
CC nodular hyperplasia, adenomas and carcinomas. DME DNA is useful for
CC creating `knockin' humanised animals (pigs) or transgenic animals (mice
CC or rats) to model human disease. DME DNA is also in useful is gene
CC therapy. DME and its immunogenic fragments are useful for screening
CC libraries of compounds in several drug screening assays.
XX
SQ Sequence 522 AA;

Query Match 99.5%; Score 2729; DB 22; Length 522;
Best Local Similarity 99.6%; Pred. No. 1.3e-252;
Matches 517; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

```
Qy          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          4 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 63

Qy         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120
              ||:|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         64 KVSVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 123

Qy        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        124 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 183

Qy        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        184 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 243

Qy        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||
Db        244 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDRTTGK 303

Qy        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        304 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 363

Qy        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        364 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 423

Qy        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        424 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 483

Qy        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGC 519
              |||||||||||||||||||||||||||||||||||||||
Db        484 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGC 522
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 5, 2003, 22:46:50 ; Search time 46 Seconds
(without alignments)
1797.751 Million cell updates/sec

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Perfect score: 2744
Sequence: 1 MAVALRGLGGRFRWRTQAVA.....VKLRISKRSGLDPTVTGCXG 521

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1107863 seqs, 158726573 residues

Total number of hits satisfying chosen parameters: 1107863

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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2: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
3: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*
4: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
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12: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1991.DAT:*
13: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1992.DAT:*
14: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*
15: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1994.DAT:*
16: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1995.DAT:*
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18: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1997.DAT:*
19: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1998.DAT:*
20: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1999.DAT:*
21: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA2000.DAT:*
22: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*
23: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*
24: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA2003.DAT:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,

and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	2742	99.9	521	21	AAB03787	Human SECIS encode
2	2742	99.9	521	21	AAB03751	Human thioredoxin
3	2736	99.7	521	23	ABP60944	Homo sapiens thior
4	2736	99.7	524	23	ABP60946	Homo sapiens thior
5	2733	99.6	524	23	ABP60941	Homo sapiens thior
6	2729	99.5	522	22	AAE05190	Human drug metabol
7	2716.5	99.0	521	23	ABP60949	Homo sapiens thior
8	2586	94.2	494	21	AAB03788	Human SECIS encode
9	2586	94.2	494	21	AAB03752	Human thioredoxin
10	2585	94.2	494	23	ABP60948	Homo sapiens thior
11	2355.5	85.8	524	23	ABP60954	Mus musculus thior
12	2354.5	85.8	520	23	ABP60956	Mus musculus thior
13	2352.5	85.7	528	23	ABP60955	Mus musculus thior
14	2318	84.5	526	23	ABP60963	Rattus norvegicus
15	2260.5	82.4	511	23	ABP60937	Bos taurus thiored
16	1461	53.2	613	23	ABP60951	Mus musculus thior
17	1460	53.2	499	23	ABP60957	Mus musculus thior
18	1442	52.6	499	23	ABP60879	Bos taurus thiored
19	1438	52.4	504	20	AAW83401	Human thioredoxin
20	1438	52.4	551	20	AAW83404	Human KM-102-deriv
21	1438	52.4	939	20	AAW83402	Human thioredoxin
22	1438	52.4	939	20	AAW83403	Human thioredoxin
23	1433	52.2	549	17	AAR92050	KM31-7 precursor.
24	1433	52.2	549	23	ABP60950	Homo sapiens thior
25	1426	52.0	497	23	ABP60942	Homo sapiens thior
26	1425	51.9	497	22	AAB90751	Human shear stress
27	1425	51.9	497	23	ABP60881	Homo sapiens thior
28	1425	51.9	497	24	AAO20625	Thioredoxin reduct
29	1425	51.9	497	24	AAO20634	Thioredoxin reduct
30	1421.5	51.8	491	22	ABB58307	Drosophila melanog
31	1421.5	51.8	491	22	ABB67058	Drosophila melanog
32	1421	51.8	497	23	ABP60943	Homo sapiens thior
33	1421	51.8	498	22	AAB24181	Human brain thiore
34	1418	51.7	497	23	ABP60958	Rattus norvegicus
35	1418	51.7	499	23	ABP60964	Sus scrofa thiored
36	1414	51.5	497	23	ABP60701	Human thioredoxin
37	1410	51.4	579	23	ABP60945	Homo sapiens thior
38	1410	51.4	613	23	ABP60953	Mus musculus thior
39	1404	51.2	577	23	ABP60947	Homo sapiens thior
40	1403.5	51.1	498	23	ABP60960	Rattus norvegicus
41	1401	51.1	516	22	ABB65695	Drosophila melanog
42	1401	51.1	516	23	ABP60940	Drosophila melanog
43	1398.5	51.0	496	23	ABP60962	Rattus norvegicus
44	1306	47.6	667	23	ABP60939	Caenorhabditis ele
45	1300	47.4	525	23	ABP60938	Caenorhabditis ele

ALIGNMENTS

RESULT 1
AAB03787
ID AAB03787 standard; Protein; 521 AA.
XX
AC AAB03787;
XX
DT 13-OCT-2000 (first entry)
XX
DE Human SECIS encoded protein sequence.
XX
KW Selenocysteine insertion sequence; SECIS; thioredoxin reductase;
KW drug development; selenoprotein expression.
XX
OS Homo sapiens.
XX
FH Key   Location/Qualifiers
FT Modified-site   520
FT   /label= Selenocysteine
FT   /note= "encoded by TGA"
XX
PN WO200026358-A1.
XX
PD 11-MAY-2000.
XX
PF 28-OCT-1999; 99WO-JP05984.
XX
PR 30-OCT-1998; 98JP-0310422.
PR 16-NOV-1998; 98JP-0325344.
XX
PA (MEDI-) MEDICAL & BIOLOGICAL LAB CO LTD.
XX
PI Toji S, Yano M, Tamai K;
XX
DR WPI; 2000-376129/32.
DR N-PSDB; AAA59835.
XX
PT Novel selenocysteine insertion sequence which enforces reading of TGA
PT as selenocysteine in a translated region upstream of it, for expression
PT of selenoproteins -
XX
PS Disclosure; Page 38-42; 60pp; Japanese.
XX
CC The present invention relates to a Selenocysteine insertion sequence
CC which enforces the reading of a TGA codon as selenocysteine in a
CC translated region upstream of it. The novel selenocysteine insertion
CC sequence (SECIS) is of human thioredoxin reductase (TxR) origin. The
CC invention also includes an expression vector for selenoproteins
CC containing the new SECIS, a host cell transformed by the vector,
CC selenoproteins produced by the host cells, and a method for screening for
CC potential inhibitors of selenoprotein expression. The sequence is useful
CC for the effective expression of selenoproteins and the development of
CC drugs for treating disorders with which selenoproteins are associated.
CC The present sequence represents a human amino acid sequence encoded by a
CC SECIS containing nucleotide sequence.
XX
SQ Sequence 521 AA;

```
  Query Match             99.9%;  Score 2742;  DB 21;  Length 521;
  Best Local Similarity   100.0%;  Pred. No. 7.4e-254;
  Matches  521;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60

Qy         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120

Qy        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180

Qy        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240

Qy        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300

Qy        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360

Qy        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420

Qy        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480

Qy        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521
              |||||||||||||||||||||||||||||||||||||||||
Db        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521


RESULT 2
AAB03751
ID   AAB03751 standard; Protein; 521 AA.
XX
AC   AAB03751;
XX
DT   04-OCT-2000  (first entry)
XX
DE   Human thioredoxin reductase (TxR) amino acid sequence.
XX
KW   Thioredoxin reductase; TxR; human; inflammation; cancer; apoptosis;
KW   X-linked inhibitor of apoptosis protein binding protein; XIAP;
KW   viral infection; chromosome 22q11.2.
XX
OS   Homo sapiens.
XX
```

FH Key Location/Qualifiers
FT Misc-difference 521
FT /note= "Selenocysteine"
XX
PN WO200026382-A1.
XX
PD 11-MAY-2000.
XX
PF 28-OCT-1999; 99WO-JP05983.
XX
PR 30-OCT-1998; 98JP-0310422.
XX
PA (MEDI-) MEDICAL & BIOLOGICAL LAB CO LTD.
XX
PI Toji S, Yano M, Tamai K;
XX
DR WPI; 2000-365627/31.
DR N-PSDB; AAA53429.
XX
PT Thioredoxin reductase II (an X-linked inhibitor for apoptosis protein
PT (XIAP)-binding protein), with thioredoxin reductase activity, useful
PT e.g. for treating apoptosis-related disorders, cancer and inflammation
PT -
XX
PS Claim 1; Page 53-56; 139pp; Japanese.
XX
CC This sequence represents a human thioredoxin reductase (TxR) protein
CC sequence. The invention relates to two TxR proteins, which have XIAP
CC (X-linked inhibitor of apoptosis protein)-binding protein activity. The
CC human TxR gene is located on chromosome 22q11.2. The invention includes
CC antibodies which bind to the proteins, a vector containing the TxR
CC encoding nucleotide sequences, and methods for producing transformants
CC using the vector. Thioredoxin reductase has cytostatic and
CC anti-inflammatory activity, and is used in the treatment of diseases
CC relating to apoptosis particularly due to cancer of viral infection. TxR
CC can also be used to treat inflammation and in the screening of
CC anti-cancer agents.
XX
SQ Sequence 521 AA;

Query Match 99.9%; Score 2742; DB 21; Length 521;
Best Local Similarity 100.0%; Pred. No. 7.4e-254;
Matches 521; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60

Qy         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120

Qy        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180

Qy        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240
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                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240

Qy        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300

Qy        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360

Qy        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420

Qy        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480

Qy        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521
                |||||||||||||||||||||||||||||||||||||||||
Db        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521
```

```
RESULT 3
ABP60944
ID   ABP60944 standard; Protein; 521 AA.
XX
AC   ABP60944;
XX
DT   06-SEP-2002  (first entry)
XX
DE   Homo sapiens thioredoxin reductase SEQ ID NO:293.
XX
KW   Multimeric protein; redox protein; thioredoxin; thioredoxin reductase;
KW   oil body; ophthalmological; antidiabetic; cytostatic; antipsoriatic;
KW   vasotropic; vulnerary; antibacterial; immunosuppressive; antiulcer;
KW   food product; milk; wheat; oxidative stress; cataract; diabetes;
KW   chronic obstructive pulmonary disease; envenomation; psoriasis; sepsis;
KW   bronchiopulmonary disease; malignancy; reperfusion injury; wound healing;
KW   gastro intestinal bleeding; intestinal bowel disease; ulcer;
KW   gastro oesophageal reflux disease.
XX
OS   Homo sapiens.
XX
PN   WO200250289-A1.
XX
PD   27-JUN-2002.
XX
PF   19-DEC-2001; 2001WO-US50240.
XX
PR   19-DEC-2000; 2000US-0742900.
PR   05-JUL-2001; 2001US-302885P.
PR   04-DEC-2001; 2001US-0006038.
XX
PA   (SEMB-) SEMBIOSYS GENETICS INC.
PA   (SYGN ) SYNGENTA PARTICIPATIONS AG.
```

XX
PI Van Rooijen G, Deckers H, Heifetz PB, Briggs SP, Dalmia BK;
PI Del Val G, Zaplachinski S, Moloney M;
XX
DR WPI; 2002-508806/54.
XX
PT Producing oil body associated with recombinant multimeric protein
PT complex e.g. redox proteins and immunoglobulins comprises producing
PT recombinant polypeptides capable of forming the complex in cells
PT comprising oil bodies -
XX
PS Claim 82; Page 337-338; 362pp; English.
XX
CC The present invention describes a method (M1) for producing an oil body
CC associated with a recombinant multimeric protein complex (MPC). M1
CC comprises producing in a cell comprising oil bodies a first and second
CC recombinant polypeptide (P1, P2), where P1 is capable of associating
CC with P2 to form the MPC and associating the complex with an occlusion
CC body (OB) through an OB-targeting-protein capable of associating with OB
CC and P1. M1 is useful for producing an oil body associated with a
CC recombinant MPC. The oil bodies are further formulated for use in the
CC preparation of a food product such as milk or wheat based food product,
CC personal care product which reduces the oxidative stress on the surface
CC area of the human body or used to lighten the skin, or a pharmaceutical
CC composition used to treat chronic obstructive pulmonary disease (COPD),
CC cataracts, diabetes, envenomation, bronchiopulmonary disease, psoriasis,
CC malignancies, reperfusion injury, wound healing, sepsis, gastro
CC intestinal (GI) bleeding, intestinal bowel disease (IBD), ulcers, GERD
CC (gastro oesophageal reflux disease). ABN89569 to ABN89593 and ABP60677
CC to ABP60964 represent sequence given in the exemplification of the
CC present invention.
XX
SQ Sequence 521 AA;

Query Match 99.7%; Score 2736; DB 23; Length 521;
Best Local Similarity 99.8%; Pred. No. 2.8e-253;
Matches 520; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60

Qy         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120

Qy        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180

Qy        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240

Qy        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300
```

```
Qy        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360

Qy        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420
              |||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 RPELTPIAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420

Qy        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480

Qy        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521
              |||||||||||||||||||||||||||||||||||||||||
Db        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521
```

RESULT 4
ABP60946
ID ABP60946 standard; Protein; 524 AA.
XX
AC ABP60946;
XX
DT 06-SEP-2002 (first entry)
XX
DE Homo sapiens thioredoxin reductase SEQ ID NO:295.
XX
KW Multimeric protein; redox protein; thioredoxin; thioredoxin reductase;
KW oil body; ophthalmological; antidiabetic; cytostatic; antipsoriatic;
KW vasotropic; vulnerary; antibacterial; immunosuppressive; antiulcer;
KW food product; milk; wheat; oxidative stress; cataract; diabetes;
KW chronic obstructive pulmonary disease; envenomation; psoriasis; sepsis;
KW bronchiopulmonary disease; malignancy; reperfusion injury; wound healing;
KW gastro intestinal bleeding; intestinal bowel disease; ulcer;
KW gastro oesophageal reflux disease.
XX
OS Homo sapiens.
XX
PN WO200250289-A1.
XX
PD 27-JUN-2002.
XX
PF 19-DEC-2001; 2001WO-US50240.
XX
PR 19-DEC-2000; 2000US-0742900.
PR 05-JUL-2001; 2001US-302885P.
PR 04-DEC-2001; 2001US-0006038.
XX
PA (SEMB-) SEMBIOSYS GENETICS INC.
PA (SYGN) SYNGENTA PARTICIPATIONS AG.
XX
PI Van Rooijen G, Deckers H, Heifetz PB, Briggs SP, Dalmia BK;
PI Del Val G, Zaplachinski S, Moloney M;
XX
DR WPI; 2002-508806/54.
XX

PT Producing oil body associated with recombinant multimeric protein
PT complex e.g. redox proteins and immunoglobulins comprises producing
PT recombinant polypeptides capable of forming the complex in cells
PT comprising oil bodies -
XX
PS Claim 82; Page 340-341; 362pp; English.
XX
CC The present invention describes a method (M1) for producing an oil body
CC associated with a recombinant multimeric protein complex (MPC). M1
CC comprises producing in a cell comprising oil bodies a first and second
CC recombinant polypeptide (P1, P2), where P1 is capable of associating
CC with P2 to form the MPC and associating the complex with an occlusion
CC body (OB) through an OB-targeting-protein capable of associating with OB
CC and P1. M1 is useful for producing an oil body associated with a
CC recombinant MPC. The oil bodies are further formulated for use in the
CC preparation of a food product such as milk or wheat based food product,
CC personal care product which reduces the oxidative stress on the surface
CC area of the human body or used to lighten the skin, or a pharmaceutical
CC composition used to treat chronic obstructive pulmonary disease (COPD),
CC cataracts, diabetes, envenomation, bronchiopulmonary disease, psoriasis,
CC malignancies, reperfusion injury, wound healing, sepsis, gastro
CC intestinal (GI) bleeding, intestinal bowel disease (IBD), ulcers, GERD
CC (gastro oesophageal reflux disease). ABN89569 to ABN89593 and ABP60677
CC to ABP60964 represent sequence given in the exemplification of the
CC present invention.
XX
SQ Sequence 524 AA;

Query Match 99.7%; Score 2736; DB 23; Length 524;
Best Local Similarity 99.8%; Pred. No. 2.8e-253;
Matches 520; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          4 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 63

Qy         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         64 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 123

Qy        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        124 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 183

Qy        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        184 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 243

Qy        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        244 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 303

Qy        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        304 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 363

Qy        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 5, 2003, 22:54:46 ; Search time 46 Seconds
(without alignments)
1797.751 Million cell updates/sec

Title: US-09-830-706B-2
Perfect score: 521
Sequence: 1 MAVALRGLGGRFRWRTQAVA.....VKLRISKRSGLDPTVTGCXG 521

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 1107863 seqs, 158726573 residues

Word size : 0

Total number of hits satisfying chosen parameters: 1107863

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : A_Geneseq_19Jun03:*
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23: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*
24: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA2003.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	520	99.8	521	21	AAB03787	Human SECIS encode
2	520	99.8	521	21	AAB03751	Human thioredoxin
3	489	93.9	494	21	AAB03788	Human SECIS encode
4	489	93.9	494	21	AAB03752	Human thioredoxin
5	488	93.7	494	23	ABP60948	Homo sapiens thior
6	419	80.4	521	23	ABP60944	Homo sapiens thior
7	419	80.4	524	23	ABP60946	Homo sapiens thior
8	356	68.3	524	23	ABP60941	Homo sapiens thior
9	355	68.1	521	23	ABP60949	Homo sapiens thior
10	355	68.1	522	22	AAE05190	Human drug metabol
11	214	41.1	234	21	AAB58986	Breast and ovarian
12	46	8.8	520	23	ABP60956	Mus musculu

RESULT 1
AAB03787
ID AAB03787 standard; Protein; 521 AA.
XX
AC AAB03787;
XX
DT 13-OCT-2000 (first entry)
XX
DE Human SECIS encoded protein sequence.
XX
KW Selenocysteine insertion sequence; SECIS; thioredoxin reductase;
KW drug development; selenoprotein expression.
XX
OS Homo sapiens.
XX
FH Key   Location/Qualifiers
FT Modified-site   520
FT   /label= Selenocysteine
FT   /note= "encoded by TGA"
XX
PN WO200026358-A1.
XX
PD 11-MAY-2000.
XX
PF 28-OCT-1999; 99WO-JP05984.
XX
PR 30-OCT-1998; 98JP-0310422.
PR 16-NOV-1998; 98JP-0325344.
XX
PA (MEDI-) MEDICAL & BIOLOGICAL LAB CO LTD.
XX
PI Toji S, Yano M, Tamai K;
XX
DR WPI; 2000-376129/32.
DR N-PSDB; AAA59835.
XX
PT Novel selenocysteine insertion sequence which enforces reading of TGA
PT as selenocysteine in a translated region upstream of it, for expression
PT of selenoproteins -
XX
PS Disclosure; Page 38-42; 60pp; Japanese.
XX
CC The present invention relates to a Selenocysteine insertion sequence
CC which enforces the reading of a TGA codon as selenocysteine in a
CC translated region upstream of it. The novel selenocysteine insertion
CC sequence (SECIS) is of human thioredoxin reductase (TxR) origin. The
CC invention also includes an expression vector for selenoproteins
CC containing the new SECIS, a host cell transformed by the vector,
CC selenoproteins produced by the host cells, and a method for screening for
CC potential inhibitors of selenoprotein expression. The sequence is useful
CC for the effective expression of selenoproteins and the development of
CC drugs for treating disorders with which selenoproteins are associated.
CC The present sequence represents a human amino acid sequence encoded by a
CC SECIS containing nucleotide sequence.
XX
SQ Sequence 521 AA;

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  Query Match             99.8%;  Score 520;  DB 21;  Length 521;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  521;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60

Qy         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120

Qy        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180

Qy        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240

Qy        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300

Qy        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360

Qy        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420

Qy        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480

Qy        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521
              |||||||||||||||||||||||||||||||||||||||||
Db        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521


RESULT 2
AAB03751
ID   AAB03751 standard; Protein; 521 AA.
XX
AC   AAB03751;
XX
DT   04-OCT-2000  (first entry)
XX
DE   Human thioredoxin reductase (TxR) amino acid sequence.
XX
KW   Thioredoxin reductase; TxR; human; inflammation; cancer; apoptosis;
KW   X-linked inhibitor of apoptosis protein binding protein; XIAP;
KW   viral infection; chromosome 22q11.2.
XX
OS   Homo sapiens.
XX
```

```
FH   Key             Location/Qualifiers
FT   Misc-difference 521
FT                   /note= "Selenocysteine"
XX
PN   WO200026382-A1.
XX
PD   11-MAY-2000.
XX
PF   28-OCT-1999;   99WO-JP05983.
XX
PR   30-OCT-1998;   98JP-0310422.
XX
PA   (MEDI-) MEDICAL & BIOLOGICAL LAB CO LTD.
XX
PI   Toji S,  Yano M,  Tamai K;
XX
DR   WPI; 2000-365627/31.
DR   N-PSDB; AAA53429.
XX
PT   Thioredoxin reductase II (an X-linked inhibitor for apoptosis protein
PT   (XIAP)-binding protein), with thioredoxin reductase activity, useful
PT   e.g. for treating apoptosis-related disorders, cancer and inflammation
PT   -
XX
PS   Claim 1; Page 53-56; 139pp; Japanese.
XX
CC   This sequence represents a human thioredoxin reductase (TxR) protein
CC   sequence. The invention relates to two TxR proteins, which have XIAP
CC   (X-linked inhibitor of apoptosis protein)-binding protein activity. The
CC   human TxR gene is located on chromosome 22q11.2. The invention includes
CC   antibodies which bind to the proteins, a vector containing the TxR
CC   encoding nucleotide sequences, and methods for producing transformants
CC   using the vector. Thioredoxin reductase has cytostatic and
CC   anti-inflammatory activity, and is used in the treatment of diseases
CC   relating to apoptosis particularly due to cancer of viral infection. TxR
CC   can also be used to treat inflammation and in the screening of
CC   anti-cancer agents.
XX
SQ   Sequence   521 AA;

  Query Match             99.8%;  Score 520;  DB 21;  Length 521;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  521;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MAVALRGLGGRFRWRTQAVAGGVRGAARGAAAGQRDYDLLVVGGGSGGLACAKEAAQLGR 60

Qy         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 KVAVVDYVEPSPQGTRWGLGGTCVNVGCIPKKLMHQAALLGGLIQDAPNYGWEVAQPVPH 120

Qy        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 DWRKMAEAVQNHVKSLNWGHRVQLQDRKVKYFNIKASFVDEHTVCGVAKGGKEILLSADH 180

Qy        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240
```

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                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 IIIATGGRPRYPTHIEGALEYGITSDDIFWLKESPGKTLVVGASYVALECAGFLTGIGLD 240

Qy        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TTIMMRSIPLRGFDQQMSSMVIEHMASHGTRFLRGCAPSRVRRLPDGQLQVTWEDSTTGK 300

Qy        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 EDTGTFDTVLWAIGRVPDTRSLNLEKAGVDTSPDTQKILVDSREATSVPHIYAIGDVVEG 360

Qy        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 RPELTPTAIMAGRLLVQRLFGGSSDLMDYDNVPTTVFTPLEYGCVGLSEEEAVARHGQEH 420

Qy        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 VEVYHAHYKPLEFTVAGRDASQCYVKMVCLREPPQLVLGLHFLGPNAGEVTQGFALGIKC 480

Qy        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521
                |||||||||||||||||||||||||||||||||||||||||
Db        481 GASYAQVMRTVGIHPTCSEEVVKLRISKRSGLDPTVTGCXG 521


RESULT 3
AAB03788
ID   AAB03788 standard; Protein; 494 AA.
XX
AC   AAB03788;
XX
DT   13-OCT-2000  (first entry)
XX
DE   Human SECIS encoded protein sequence.
XX
KW   Selenocysteine insertion sequence; SECIS; thioredoxin reductase;
KW   drug development; selenoprotein expression.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   593
FT                   /label= Selenocysteine
FT                   /note= "encoded by TGA"
XX
PN   WO200026358-A1.
XX
PD   11-MAY-2000.
XX
PF   28-OCT-1999;   99WO-JP05984.
XX
PR   30-OCT-1998;   98JP-0310422.
PR   16-NOV-1998;   98JP-0325344.
XX
PA   (MEDI-) MEDICAL & BIOLOGICAL LAB CO LTD.
XX
PI   Toji S,  Yano M,  Tamai K;
XX
```

DR WPI; 2000-376129/32.
DR N-PSDB; AAA59836.
XX
PT Novel selenocysteine insertion sequence which enforces reading of TGA
PT as selenocysteine in a translated region upstream of it, for expression
PT of selenoproteins -
XX
PS Disclosure; Page 48-52; 60pp; Japanese.
XX
CC The present invention relates to a Selenocysteine insertion sequence
CC which enforces the reading of a TGA codon as selenocysteine in a
CC translated region upstream of it. The novel selenocysteine insertion
CC sequence (SECIS) is of human thioredoxin reductase (TxR) origin. The
CC invention also includes an expression vector for selenoproteins
CC containing the new SECIS, a host cell transformed by the vector,
CC selenoproteins produced by the host cells, and a method for screening for
CC potential inhibitors of selenoprotein expression. The sequence is useful
CC for the effective expression of selenoproteins and the development of
CC drugs for treating disorders with which selenoproteins are associated.
CC The present sequence represents a human amino acid sequence encoded by a
CC SECIS containing nucleotide sequence.
XX
SQ Sequence 494 AA;

Query Match 93.9%; Score 489; DB 21; Length 494;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 490; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy         32 AGQRDYDLLVVGGGSGGLACAKEAAQLGRKVAVVDYVEPSPQGTRWGLGGTCVNVGCIPK 91
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          5 AGQRDYDLLVVGGGSGGLACAKEAAQLGRKVAVVDYVEPSPQGTRWGLGGTCVNVGCIPK 64

Qy         92 KLMHQAALLGGLIQDAPNYGWEVAQPVPHDWRKMAEAVQNHVKSLNWGHRVQLQDRKVKY 151
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         65 KLMHQAALLGGLIQDAPNYGWEVAQPVPHDWRKMAEAVQNHVKSLNWGHRVQLQDRKVKY 124

Qy        152 FNIKASFVDEHTVCGVAKGGKEILLSADHIIIATGGRPRYPTHIEGALEYGITSDDIFWL 211
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        125 FNIKASFVDEHTVCGVAKGGKEILLSADHIIIATGGRPRYPTHIEGALEYGITSDDIFWL 184

Qy        212 KESPGKTLVVGASYVALECAGFLTGIGLDTTIMMRSIPLRGFDQQMSSMVIEHMASHGTR 271
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        185 KESPGKTLVVGASYVALECAGFLTGIGLDTTIMMRSIPLRGFDQQMSSMVIEHMASHGTR 244

Qy        272 FLRGCAPSRVRRLPDGQLQVTWEDSTTGKEDTGTFDTVLWAIGRVPDTRSLNLEKAGVDT 331
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        245 FLRGCAPSRVRRLPDGQLQVTWEDSTTGKEDTGTFDTVLWAIGRVPDTRSLNLEKAGVDT 304

Qy        332 SPDTQKILVDSREATSVPHIYAIGDVVEGRPELTPTAIMAGRLLVQRLFGGSSDLMDYDN 391
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        305 SPDTQKILVDSREATSVPHIYAIGDVVEGRPELTPTAIMAGRLLVQRLFGGSSDLMDYDN 364

Qy        392 VPTTVFTPLEYGCVGLSEEEAVARHGQEHVEVYHAHYKPLEFTVAGRDASQCYVKMVCLR 451
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        365 VPTTVFTPLEYGCVGLSEEEAVARHGQEHVEVYHAHYKPLEFTVAGRDASQCYVKMVCLR 424

Qy        452 EPPQLVLGLHFLGPNAGEVTQGFALGIKCGASYAQVMRTVGIHPTCSEEVVKLRISKRSG 511
```

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                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        425 EPPQLVLGLHFLGPNAGEVTQGFALGIKCGASYAQVMRTVGIHPTCSEEVVKLRISKRSG 484

Qy        512 LDPTVTGCXG 521
                ||||||||||
Db        485 LDPTVTGCXG 494
```